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LIGHTING FOR DECORATION AND FESTIVITY



INCANDESCENT LAMP DEPARTMENT

GENERAL ELECTRIC
COMPANY
NELA PARK ENGINEERING DEPARTMENT
CLEVELAND



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Whether the garden is large or small, formal or informal, the illumination should be applied in a manner to create a satisfying night picture with no attempt to imitate the daytime appearance.

Examples of Lighting for Decoration and Festivity

By G. R. LaWALL and C. M. CUTLER

This paper suggests, by a few selected examples, the forms, constructions, and certain principles of decorative lighting adaptable to activities in the home, to institutions, and to gardens. It points out a few materials needed for the development of this art.

THE popular impression of decorative lighting is something which belongs to the stage, expositions, pageants, and the one holiday —Christmas. It has as yet penetrated the consciousness of only a few that it is equally available, perhaps in a somewhat more modest and intimate way, to enhance the social activities of families and groups, and to add to the joy of every-day living. It is not yet generally realized that such lighting is quite within the capabilities of the average hostess, householder, or gardener. But like any other art it requires for its stimulation adequate commercial and social sponsorship; it needs manufacturers, tradesmen, and craftsmen who see the opportunity to furnish new materials and a creative service.

In this paper no attempt is made to treat this field of lighting systematically or inclusively. Instead, selected examples and a few comments are presented, which it is hoped will assist in indicating the scope of these less elaborate applications and serve to point out a few principles and some of the materials now available or still to be supplied to facilitate the practice of this pleasant art.

The examples presented are, with one or two exceptions, the work of the authors or their associates at Nela Park. They comprise effects designed for homes, gardens, and institutions of various characters.

ELEMENTS AND EFFECTS

Superposed Color Elements

The multi-layer pattern and color principle which our associates, Messrs. Carlson and Potter, developed with such striking effect for

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silhouette signs and architectural elements has especial value in light decorations. It opens up a vast range of new effects in this field. This principle enables one to utilize the multiplied effectiveness of contrasting colors when placed in juxtaposition, variety of texture enhanced by luminosity and reflection characteristics of the surfaces used, and patterns sharpened or softened, shrinking and swelling, with change in the relative brightness and color of the superposed surfaces. One may create the impression of indefinite depth and of translucency in opaque materials. One has at his command a vividness surpassing the brightest pigments, and the charm of evanescent delicacy in pastels.

While white surfaces or those of neutral tone provide complete flexibility of light coloration, pigment may be applied to produce an appropriate daytime appearance providing it is so selected and so applied that the desired hues are obtained from the colored lighting.

The lighting equipment ranges from the smallest bare lamps to large projectors and multiple circuits, depending upon the scale of the display and whether the light is to be fixed, as in Figs. 1 to 4, or mobile, as in Fig. 11.

This type of decoration was first suggested for garden ornaments for a Governors' Convention where large-scale representations of the several State flowers seemed to form an appropriate decoration. A few other applications are shown in Figs. 1 to 4. While these units at once suggest themselves for large-scale effects, they may be carried out also in relatively small dimensions—to form, for example, a novel basket of luminous flowers as a large-scale decoration for places given to care-free entertainment. Similar flowers may be built into a backdrop. The Chromaflector or Fleurette construction discussed below is likewise adapted to the production of such flowers.

Christmas nativity scenes are realistic and impressive when presented in four planes painted in colored light. Such pieces are easily made for small-scale home decoration, with S-11 lamps concealed behind each plane to supply the light.

Pylons of Light

Luminous pylons form potent decorative elements out-of-doors and in large interiors—for streets, public places, commercial establishments, fairs, gardens, and estates. They permit a freedom in style and detail still largely unexplored in respect to form, color, applied



FIG. 1—Three layer conventionalized Christmas tree, two feet high, lighted with familiar eight-lamp series string. Five colors used. Streamers created by scratching through outside coating of lamps. Two front planes bowed to produce finished appearance through wider angle.



FIG. 2—Girl scouts decked this tree with food for birds. Four foot blue jay and cardinal on the other side of tree gave this Christmas display distinction. Behind the jay, three 40-watt yellow lamps, small opaque shield in front covers 100 watt floodlight with blue roundel directed on jay. Richly colorful Christmas decoration at the right has a disc 20 inches in diameter lighted with 25-watt clear lamp behind poinsettia. Petals of poinsettia painted red, leaves black, center of translucent gold paper. Poinsettia lighted by 60 watt red lamp screened by silver holly spray.



FIG. 3.—Fifteen glowing conventionalized floral pieces lighted refreshment tent at November wedding. Two-surface wall units illuminated in delicate pastel shades; center pole unit rises in progressively warmer tones. All surfaces oxidized aluminum. General illumination from upper bowl. Total wattage for tent alone 12,500.



FIG. 4.—Luminous poinsettias, vivid against discs transformed by graduated white light into seemingly translucent spheres, became key note of December wedding in same home. Forty five hundred six-watt lamps form the canopy.

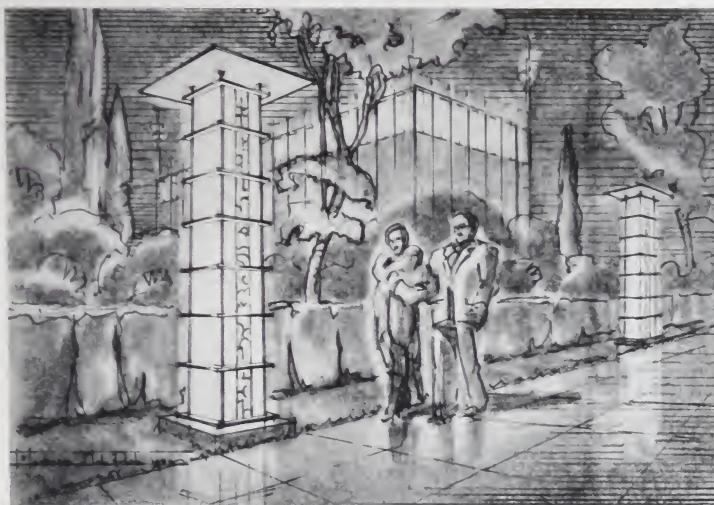


FIG. 5—Luminous pylons of inexpensive materials supply agreeable lighting and add a holiday atmosphere. Formed in wood or metal frames and covered with lacquered muslin they are inexpensive and adaptable to desired decorative schemes

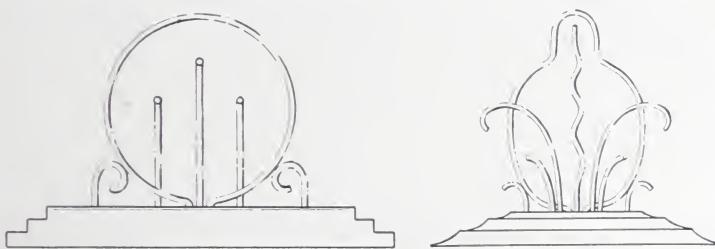


FIG. 6—Cane glass offers a medium for luminous ornaments of low brightness, dignity and beauty. Color is controllable in the light source or by filters for different sections of a pattern. Sparkle and highlights are obtained from exposed ends of rods.

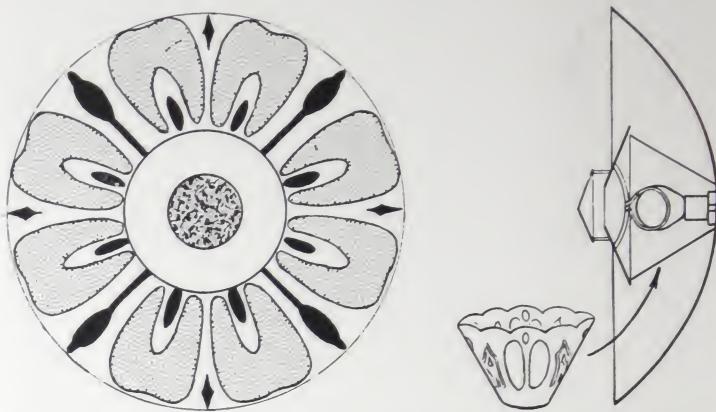


FIG. 7—In the Chroma reflector, pattern and color are determined by the changeable cone introduced between light source and reflector. A semi mat reflector surface is satisfactory both as to brightness and effective angle. For a 20 inch unit, lamps of 25 to 100 watts are applicable



FIG. 8—Fleurettes are smaller reflector units in which the stencil is carried on the lamp. For large scale effects, viewed at a distance, detail of stencil would be lost and one must depend merely upon shape of the reflector, in effect, open units of the applique type. Useful in providing rhythmic accent in festooning

design, or animation. Only one example, Fig. 5, is here shown. Smaller units have a wide field of application. Outstanding results have been achieved in this medium in several European countries.

Cane Glass

Then there is the well-known but little-used principle of light transmitted through lengths of suitable glass. This has sometimes been demonstrated with quartz, but glass of high transmission and low refraction, such as Pyrex, is well adapted for the same purpose. We suggest, particularly, the use of glass rods or cane bent into appropriate decorative forms. While most of the light is conducted through, the entire rod assumes a pleasing glow. Closed figures may be constructed or interesting spots may be formed by the beams issuing from exposed ends. Seeds and bubbles and slight surface etchings or cuttings produce a range of brightness and interest. Color and brightness changes may be introduced in the path of the beam. Lamps with concentrated sources are concealed in suitable housings with the end of the rod placed as close as possible to the light source (Fig. 6). Sharp right-angle bends may be made with prisms or 45-deg mirror fittings.

This glowing cane is obviously not at its best in a brilliant display. Its place is more in the field of dignified and restrained decoration.

Chromaflector

Decorative materials that can from time to time readily be given a new aspect have a particular value for the professional decorator, the place of amusement, and the householder. The Chromaflector, Fig. 7, is such a device and yet it is very simple, consisting of a reflector with mat or semi-mat surface and a lamp over which is placed a truncated cone stenciled with a decorative pattern filled in with a color medium. Endless changes in pattern and color can then be provided by altering only the cone. The device is as useful for garden parties as for indoor festivities.

Fleurettes

Ordinary festooning has both a certain monotony and a lack of accent and finish. Fleurettes relieve the former and supply the latter. They are small reflectors, which may be formed in floral or geometric

shapes, and lamps which are colored or carry stencils to produce designs on the luminous surface of the reflector. Polished reflector surfaces should be used with stencils. With colored lamps alone, mat surfaces are to be preferred. In either case the brightness of these ornaments is suitable for use with the exposed lamps with which they are combined. Fig. 8 presents only one of a great variety of applications for these small units; they may be combined into larger pieces with endless variety of design.

Party Luminaires

Fig. 9 shows the elements of the Tablier, a unit which serves to light the dining table, permits a ready change of design and color in its flat top, and spotlights ornaments, vases, and flowers in an unusual manner. Thus the usual atmosphere of the dining room can be changed for a special occasion. The Tablier can be combined with tall tapers without losing the charm associated with candle light.

Certain social occasions demand more than the usual room illumination. One way to get it and at the same time to change the atmosphere of a room is to use lamps in wood or wire frames that may be suspended from picture hooks or molding. (Fig. 10). The frames are covered with fabric or paper decorated to fit the occasion.

Another way to introduce a new feeling and decoration in a room is by means of corner panels. The photograph, Fig. 10, suggests an example, triangular in section, consisting of a simple wooden structure with translucent face of fabric, crepe or tracing paper, decorated or plain.

Shadoscreen

A portable translucent screen, Fig. 17, possibly of lacquered muslin, affords a ready means for creating pleasing and delicate pictures in color, merely by arranging flowers, foliage, or other objects between the screen and two or more colored light sources. The Shadoscreen is a low-brightness illuminant and ornament which may be altered to suit the mood or occasion, whether in the garden or solarium, or on the hearth in summer. Within limits, a simple design on the surface will not interfere with the night patterns.

Where planting does not afford a suitable background for dancers or musicians at a garden party, it is a simple matter to install softly luminous screens which may take the form of decorated panels or



FIG. 9—The Tablier, simple party luminaire using lamp of about 40 watts. Cylinder is diffusing. Stencils and colored gelatine or cellophane may be placed between the two plates, with the diffusing disc on top. Sometimes a different color or none at all will be desired for the center.

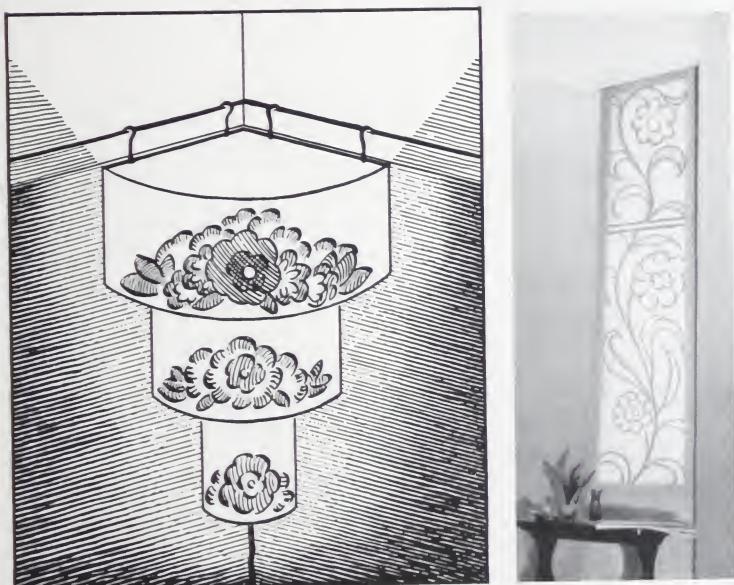


FIG. 10—Supplementary light for the party—at the left, from paper or fabric luminaires hung from the molding or wall hooks—at the right, from portable corner panels.



FIG. 11—(Above) Sparkle and dazzle are here replaced by an airy fantasy, richly colorful but in a restrained key. Multi-layer tree in mobile color; other elements fixed stars variegated pilasters of lacquered muslin lighted red, topped with blue grizzles in orange amber. Merry Christmas in 10-watt green lamps exposed

FIG. 12—One hundred fourteen projectors (left) of 100 and 200 watts each with roundels of four colors operated in 17 groups by automatic dimmer to produce an ever-changing play of mobile color on the 15-foot tree of FIG. 11.

Screened lamps of all colors, 10 to 60 watts, were used (right) in the various stars. Merging bands of color decreased in brightness toward ends.





FIG. 13—The scene of the Nativity casts a spell when presented in four planes painted in colored light. Groupings of wise men and camels, shepherds and flock in the foreground add realism.

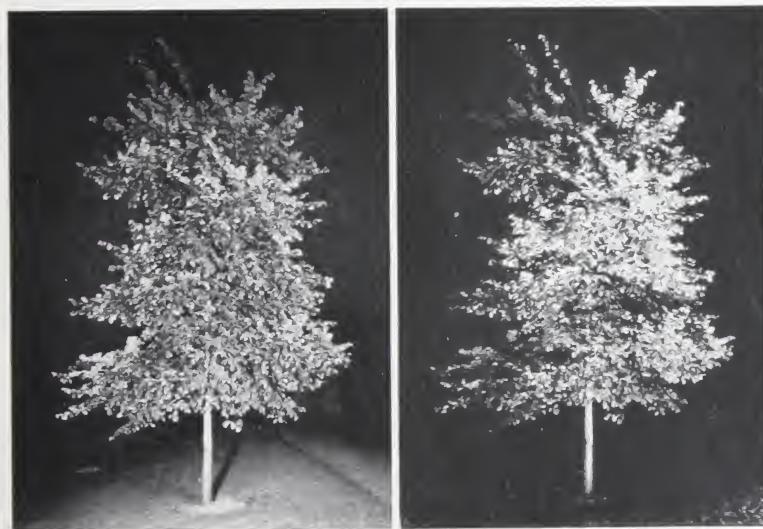


FIG. 14—Tree at left lighted entirely from front, giving flat appearance. At right, form retained by lighting from two directions to unequal brightness or with color difference.



FIG. 15—Decorated translucent screen forms luminaire of low brightness for outdoor living room. Transparent lacquer improves appearance and protects fabric

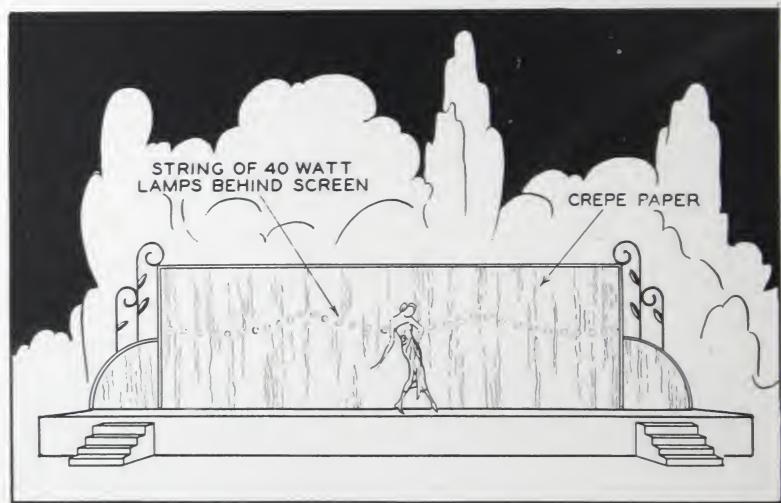


FIG. 16—Where planting does not afford a suitable background it is a simple matter to install a softly luminous background for dancers or musicians at a garden party

merely an expanse of fabric lighted in color from strings of lamps placed behind.

Institutional Displays

One installation, only, is here illustrated to indicate how various elements may be combined to produce novel and satisfying decorations. Institutional displays traditionally depend upon brightness and sparkle for their attraction. These will always have a very large place. There is also opportunity for appealing pictures in a key of lower brightness. The first type, while enhanced by good design and arrangement, does not require for a satisfactory ensemble the same care as does the second in respect to balanced brightness. In the display shown in Fig. 11 this was accomplished by careful consideration of size and brightness of each element in relation to its location and importance. The introduction of mobile color further emphasized the 45-foot multi-layer tree, which was the center of interest. Bright scintillating stars would have been out of key with this dominant element. Accordingly, a unique effect was created in conventionalized indirectly-lighted stars, Fig. 12. They presented not just softer shaded lines of light, but bands of graded color, differently arranged for every star. The lighting of the stars was fixed, as was that of the lacquered fabric pilasters, which were lighted in red, grading into blue at the top.

LIGHT IN THE GARDEN

In the garden one may use merely a flood of light to make it possible to extend the hours during which the garden may be seen, or the gardener may approach it in a creative spirit adding the elements of the illuminating art to the other resources of his garden to produce new satisfactions. For the former purpose floodlights of relatively large wattage, mounted well above the garden, as from the gable of a house or in the branches of a tree, serve well. Such lighting is sometimes thought of as duplicating the conditions of daylight, but this cannot be done from a single source, since the sky contributes daylight from all directions, even when the sun is shining.

Lighting of Trees

If lighted from a single direction, a tree will often appear flat and uninteresting. The form of the tree can be brought out by lighting

from at least two directions, particularly if a difference in intensity or color is introduced (Fig. 14). Since artificial light contains relatively more red than does daylight, the natural color of the leaves is best shown by means of an especially selected green or bluish-green filter.

It is not generally realized that the foliage of shrubs and trees reflects other colors to a considerable extent and that for special occasions it is possible to transform a tree by painting it in various hues, which, if done with discrimination, will make it an object of interest and beauty, rather than something grotesque. So for planting in general, the harshness of clear light may be modified to lend a more illusive quality to the scene, or to make the background recede farther into the distance.

Pendant strings of colored lamps hung on trees in random lengths produce a festive setting and are particularly fascinating when swaying in the breeze. Such gold bedecked trees claimed much favorable attention during Light's Golden Jubilee.

Subdividing and Distributing the Light

Gardens are usually so located that there is very little competing brightness. One must therefore be careful to avoid excessive values of general illumination. Sustained brightness through the depth of the garden tends to destroy aerial perspective; decreasing brightness increases the apparent depth.

If one wishes to explore the real possibilities of garden illumination, he must subdivide his light by using numbers of small, inexpensive equipments, Fig. 18, with lamps rated in tens rather than in hundreds of watts. Then, against a background of a low order of general illumination, one is able to pick out the choicest aspects of the planting or blooms and accentuate their color, form, and texture with intelligently directed and colored light always with an eye to pleasing composition for the whole scene. All through the season the ingenious devotee of the garden lighting art will find new beauties to reveal.

Concealment of the equipment employed becomes one of the prime problems. Sometimes planting will serve as a shield. A bird house may be used as in Fig. 19. Again, recesses may be provided in garden furniture, or the units may be placed in trellises and arbors and made inconspicuous by vines. Panels like the Shadoscreen, described above, may sometimes be employed, or small ornamental shields utilized as discussed below.



FIG. 17.—The Shadoscreen may be used to shield projectors from view. Interposes colored designs cast by flowers and foliage. In the house such results obtained with vases of flowers, branches or other objects placed between screen and lamps of two or more colors. Same principle finds application to large surfaces such as background for outdoor stage



FIG. 18.—Small chromium sign reflector fitted with spike for garden installation. Twenty-five to 40 watt lamps most often indicated. Luminous ornament at the right conceals the reflector



FIG. 19—(Left) Bird houses may conceal lamps for general illumination. House itself is more interesting if lighted from within.

FIG. 20—(Right) Backs of these shades, to which bare S11 lamps are clipped, are white and fronts are finished in bright colors.



FIG. 21—Light for the body of the bird comes through a hole hidden by the wing



FIG. 22—Five reflectors are flexibly mounted on back of panel so light may be distributed to best advantage. Front of panel pale blue-green, lighted from half dozen small lamps in copper trough decorated to form pleasing silhouette.



FIG. 23—Luminous pedestal bird bath incorporating several reflectors, for general lighting of adjacent areas. Green lamp at the base and two orange lamps at top illuminate the three decorated panels of flashed opal glass. (Large scale blueprints of any of these drawings available upon request.)



FIG. 24—Suggested kit of equipment for promoting lighting of small gardens.



FIG. 25—The equipment of Fig. 24 installed.

Wiring should be carried out so as to bring the switches to a convenient viewing point from which the night garden may be built up or varied as the occasion demands. The smaller units intended primarily for accenting may be connected to a separate circuit and turned off so as not to be annoying when it is desired to wander about in the garden itself.

Opaque Shields

Small inexpensive metal ornaments on spikes of various lengths afford a simple means of concealing low-wattage lamps for lighting borders, small flower beds, bird baths, or emphasizing any part of the garden where a spot of color is desired. (Fig. 20). For this purpose the familiar weatherproof strings of seven multiple sockets for intermediate base lamps of 6 and 10 watts are very convenient, and often available from the householder's stock of seasonal decorative materials.

Luminous Shields

A more highly-developed form of shield is the bird, Fig. 21, with the wing set forward to permit some of the light to illuminate the body of the bird. Ornaments of similar construction in the form of fruits, flowers, butterflies, or conventional shapes may likewise be used on shrubs and trees.

More decorative and of wide utility is the panel of Fig. 22, which carries five reflectors so mounted that their direction may be adjusted at will. Such panels are particularly appropriate to flank the entrances or main approaches of a garden.

Lighted Bird Bath

Bird baths, popular as daytime decorations, are logical centers of emphasis in the nighttime garden setting, and they are ideal for concealing units for general lighting. In Fig. 23 three sides of the pedestal are merely decorative luminous panels while the directed light issues through stippled glass in the fourth side. In this particular example one might further incorporate facilities in the bowl for illuminating a suitable ornament such as a statuette or glass ball from below.

Built-in Pool Light

The pool is an especially important element in a lighted garden because not only can one retain all of its day values, but in addition

it serves as a mirror in which the fairy-like additions to the night garden scene are reflected and made more elusive in the gently-rippling surface. A pool is an interesting accessory to floodlights since beams directed obliquely to its surface glance off to illuminate bordering planting and structures in a soft, agreeable manner. Particularly interesting is the result when the water is stirred by a breeze or the trickle of a fountain, producing a rhythmic ripple over the whole illuminated scene.

Underwater lighting also has charm. The relatively high cost of available equipment has retarded its use. One solution is to include watertight glazed recesses in the masonry to accommodate inexpensive concentrating reflectors. The recess and window should be made large enough to give some freedom in directing the beam.

Portable Worklight

Some gardeners do not have time by day to give the garden all the attention it needs at certain seasons. Even the women of the garden clubs have shown much interest in some provision which will enable them to continue their garden activities in the cool hours of the evening. Sprinkling, spraying and setting out plants are facilitated by lighting from a handy floodlight or angle reflector, mounted on a portable standard about 8 or 10 feet high. A sharp standard point permits sticking it into the ground where needed. Incidentally, the worklight will often become the first incentive to practice garden lighting as an art.

Garden Lighting Kit

The desire on the part of garden lovers for lighting exceeds the interest and the activity of equipment manufacturers and contractors in supplying it. With nothing offered him, the gardener does not know what to ask for. Lighting-service men and contractors will therefore find a garden lighting kit, containing an assortment of materials, useful as well for seasonal decorations throughout the year, a valuable aid in securing the interest of the gardener and helping him to develop a lighting scheme. The amount of material for such a kit is of course variable. The assortment shown in Fig. 24 has a total retail value in the order of \$16 to \$18, is conveniently portable, and would serve the requirements of the small garden.



FIG. 26.—(Left) One of the accessories still needed for garden lighting are holders which carry two sets of lugs so that two sizes of floodlights may be inserted. Particularly useful to serve a smaller number of floodlights moved about at various times.

FIG. 27.—(Right) The pointed end of the portable work-light makes it easy to place wherever needed.

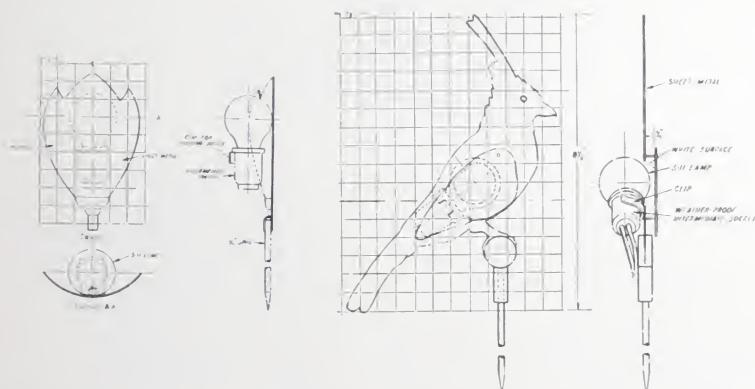


FIG. 28—Details of the construction of opaque shields, designed especially for lighting borders, small flower beds, or groupings. The S-11 lamp, available in either 6 or 10 watts, produces surprising effects. A hole in the body behind the wing of the bird at the right provides indirect illumination for the bird's body.



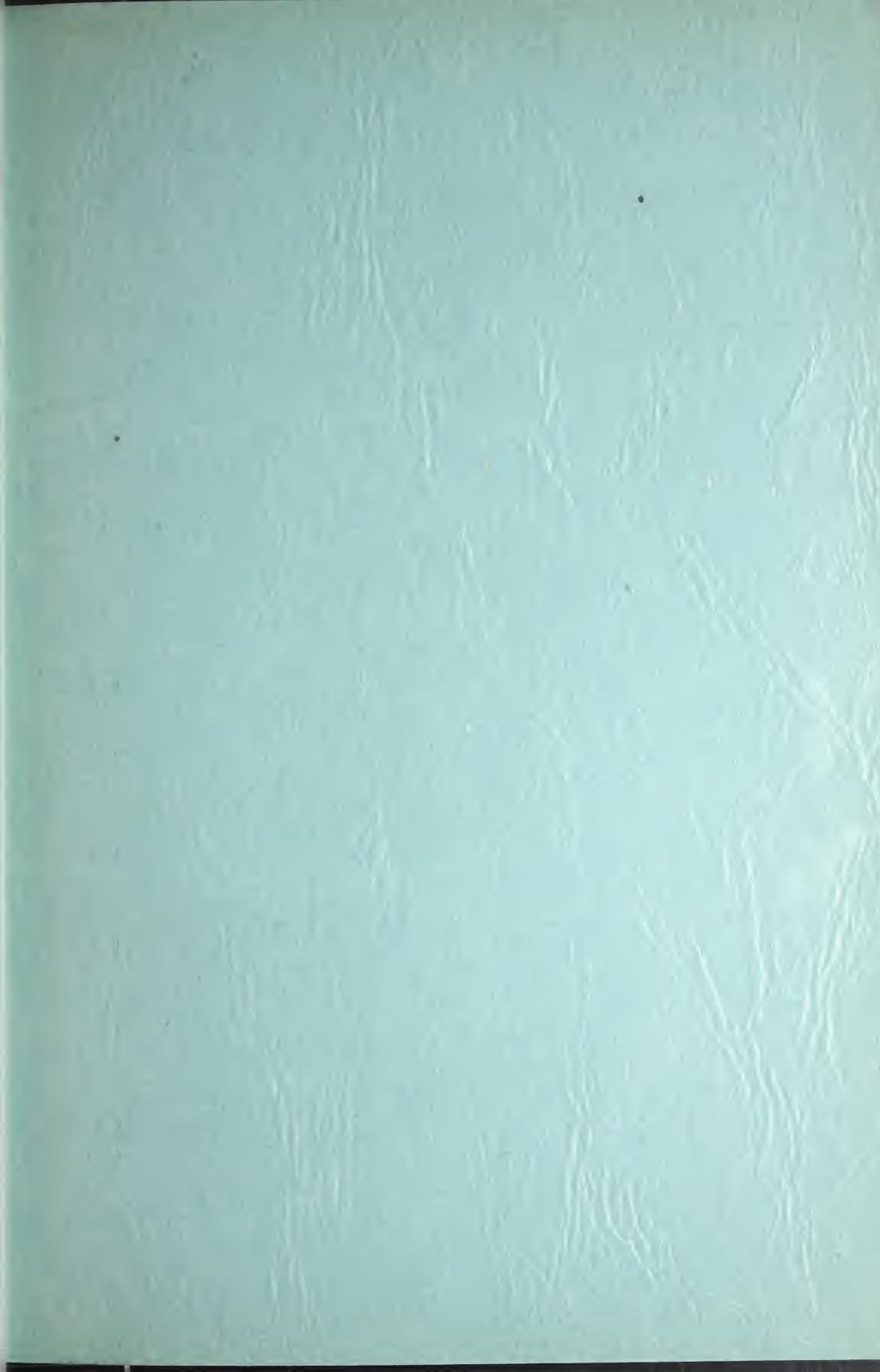
FIG. 29—Lighting built into these beach umbrellas produces a gay and colorful effect as well as useful illumination on the tables



FIG. 30



FIG. 31—As a large scale decoration for a place given to carefree entertainment, a basket of luminous flowers introduces a new note. They may be executed in Multi Layer Chroma reflector or Fleurette construction. Similar flowers may be built into a back drop





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